

# Child Stunting in India: New Figures with Flagrant Challenges

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## How to cite this article:

Indresh Kumar/Child Stunting in India: New Figures with Flagrant Challenges/Int J Food Nutr Diet. 2023;11(1):9-13.

## Abstract

Around 144 million children worldwide still suffer from stunting, even though the incidence of the condition has been steadily declining for the past 30 years. More than any other factor, stunting has negative long-term effects on a child's physical and cognitive development. In the Global Hunger Index 2022, India ranked 107 out of 121 countries, with the highest child-stunting rate in the world at 35.5%. Indian, however, noted improvement in two parameters of child stunting from 38.7% in 2012-16 to 35.5% in 2017-21. Telangana, Gujarat, Kerala, Maharashtra, and West Bengal all have high rates of child stunting. There has been progressing, but persistent inequality still exists. Infant and child care practices, hygiene, and inadequate food security in the poorest households are among the immediate and underlying factors that contribute to stunting. This article deliberates on challenges and prevention statistics for stunting. The results of the study show that even after the efforts being made by the government, the old challenges have remained.

**Keywords:** Stunting; height-for-age; NHFS-4; NHFS-5; child health; physical development; underweight.

## INTRODUCTION

Indian children are among the shortest children in the world. This article uses data from the National Family Health Survey-5 (NFHS-5) to examine the height complexity and heterogeneity of children in

the country. It has been found that the height-for-age (stunting) of children in India has improved between National Family Health Survey-4 (NHFS-4) 2015-16 and NHFS-5. While this is significant, the increase is small considering the overall short length of India and India's economic progress.<sup>2</sup>

The average height of the children of a population is an important measure of its human development. The distribution of height in a population reflects the health and well-being that children experience at a young age.<sup>1</sup> What happens to infants and children is important to their achievement, health, and survival throughout life. For decades, policymakers, researchers, and everyone concerned about the well-being of children have agreed on the simple fact that India's children are among the shortest in the world. Unfortunately, for almost the past decade we have relied on one main source for this fact. That source is a survey

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**Received on:** 23.02.2023

**Accepted on:** 03.03.2023

conducted in 2019-21. Even Bangladesh, Nepal, and other countries have released data from several new demographic surveys. A researcher could be forgiven for questioning that some decision-makers are indifferent to facts about children's height.<sup>3</sup>

That changed in 2019 and 2021: NFHS-5 was completed. Across India, surveyors took measurements of a representative sample of 1,80,867 children under the age of five. The researchers expected that with faster economic growth and other improvements in human development, the average height of children would have increased from a decade earlier. But India catching up with the rest of the world.<sup>1</sup>

Stunting, wasting, and being underweight was significantly higher using WHO charts. The prevalence of stunting and wasting changed from high to medium and critical to poor when the reference changed from the World Health Organization (WHO) to synthetic Indian charts (SC).<sup>4</sup> All Z-scores showed an improving trend with an increasing wealth index. On SC, almost all WHZ (wasting) from the richest to poorer were  $>-0.5$  (clinically significant), whereas on WHO charts all wealth classes had WHZ  $<-0.5$ . For children under the age of 6 months, WHZ from richest to poorest was between  $-0.97$  and  $-0.89$  by WHO and  $0.27$  and  $0.38$  by SC.<sup>5</sup>

## METHODOLOGY

This article is based on narrative review methods and reports published by international agencies as well as Indian government are included in this study. Peer review refereed journal articles were included in this study and retrieved from NCBI electronic library which was published from 2017 to 2022.

## RESULT AND DISCUSSION

### *Difference in figures*

The estimated number of underweight, malnourished, and severely malnourished children under 5 years of age is obtained under NFHS conducted by the Ministry of Health & Family Welfare. As per the recent report of NFHS-5, the nutrition indicators for children under 5 years have improved as compared with NFHS-4. Stunting has reduced from 38.4% to 35.5%, Wasting has reduced from 21.0% to 19.3% and Underweight prevalence has reduced from 35.8% to 32.1%.<sup>1</sup>

In recent research, we analyzed children's height data from the NFHS-5. Statistics researchers summarize children's heights as height-for-age standard deviations, which show how much a population of children differs from the distribution of heights of healthy children on average. A height-for-age mean of '0' indicates that the population is healthy. Unfortunately, this number is usually negative for a sub-population of Indian children.<sup>6</sup>

Between 2015-16 and 2019-21, the average height-for-age of Indian children increased from  $-1.48$  to  $-1.00$  overall. This is a major and significant improvement that reflects the achievements made in human development. In terms of average height, there has been improvement across rural and urban children, among boys and girls, in the plains states of northern India and the rest of India.<sup>1,7</sup>

One way of looking at the statistics is that the most deprived places in India are now in as bad a condition as the whole of India was 10 years ago. In the year 2015-16, the height-for-age of children 3, 4, and 5 years of age in India was  $-2.11$ . This is almost enough to classify him as a 'thigna'. Stunting is a condition that reflects extreme levels of deprivation. In 2019-21, the average rural child of these ages in the 'focus states'-Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh-had a height-for-age of  $-2.06$ .<sup>3,8</sup>

Complete list of the districts that are taken into account in this study, as well as how their percentage of stunted children changed between NFHS-4 and NFHS-5. Maps showing the prevalence of childhood stunting in India's districts over the two time periods. From 2015 to 2016, childhood stunting varied from 12.4% in Kerala's Ernakulum district to 65.1% in Uttar Pradesh's Bahraich district. In contrast, between 2019 and 2021, the rate of childhood stunting varied from 13.2% in the Jagatsinghpur district in Odisha to 60.6% in the Pashchimi Singhbhum district in Jharkhand.<sup>1,10</sup> However, the comparative analysis of childhood stunting from the two rounds of the NFHS reveals that there were a total of 278 districts in 2015-16 with a percentage of childhood stunting higher than the national average (38.4%); There are 283 districts in 2019-21 that are higher than the national average of 35.5%. According to the findings of the change detection study, there are 231 districts in which the prevalence of childhood stunting increased between the years 2015-16 and 2019-21. Among these areas, the Kowhai locale of Tripura and the Kozhikode region of Kerala showed the most noteworthy expansion in youth hindering (27.5% and 25.4% respectively) over the most recent 5 years. On the other hand, childhood stunting was

decreasing in 411 of 692 districts.<sup>11</sup> The Madhya Pradesh districts of Bhopal and Tikamgarh saw the largest decreases (27.2% and 22.2%, respectively). There are fifty districts in which childhood stunting did not significantly change.

In addition, Moran-I statistics were calculated to determine the extent to which Indian districts are geographically clustered regarding childhood stunting. For the years 2015 to 2016, the Moran's-I value was 0.652 (P-value .001), whereas for the years 2019 to 21, it was 0.520 (P-value .001). The close clustering of districts with a similar prevalence of childhood stunting was illustrated by the high value of Moran's I.<sup>12</sup>

Once the presence of clustering is confirmed, univariate Local Indicators of Spatial Association

(LISA) cluster and significance maps (Figure 'a' and figure 'b') were used to identify the significant clusters of childhood stunting for both periods. Comparing the 'b' cluster maps it was evident that most of the high-high clusters consist of districts of Uttar Pradesh, Bihar, Jharkhand, Madhya Pradesh, and Gujarat during 2015-16 and 2019-21.<sup>14</sup> However, additional hotspots were found in the districts of Karnataka and Chhattisgarh during 2019-21. Low-low clusters were from the district of Tamil Nadu, Kerala, Punjab, and Haryana during both periods. In addition to these, during 2015-16 few of the cold spots were also from Himachal Pradesh and Telangana whereas in 2019-21 excluding a few of these cold spots, new cold spots came from Rajasthan.<sup>15</sup>

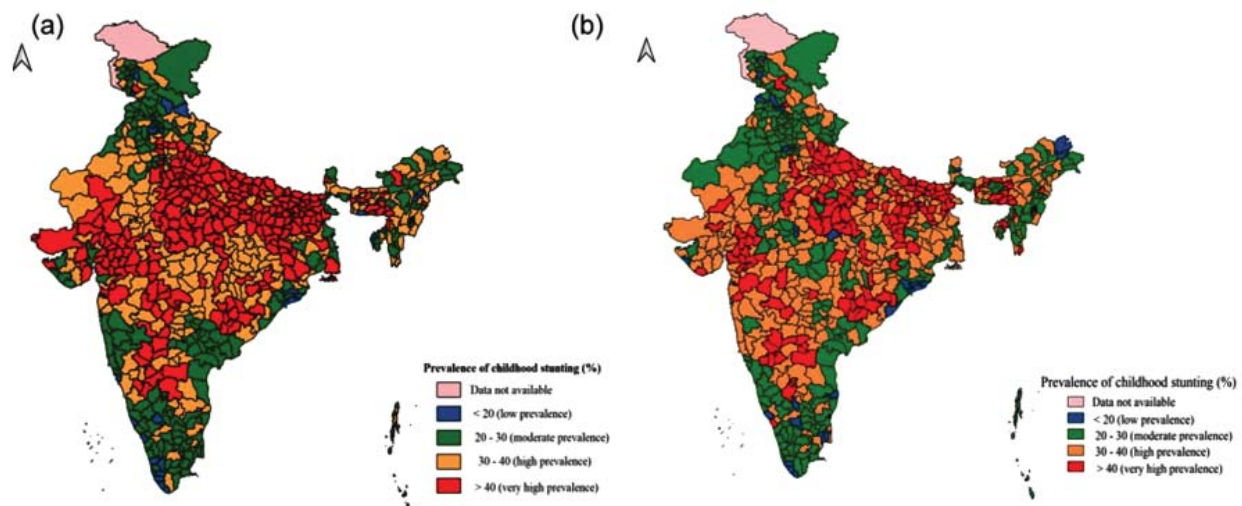


Fig. : District-level prevalence of childhood stunting in India during (a) 2015-16 (NFHS-4) and (b) 2019-21 (NFHS-5)

### Similar Challenges

Although Indian children are now taller on average, the earlier pattern of discrimination still exists. Comparing NFHS-4 and NFHS-5, the average height-for-age of children in each caste group appears to be increasing. Nevertheless, the difference in height between the children of the deprived castes and those of the general castes remains the same as before. In both cycles of the survey, SC/ST (SC/ST) children were almost half a standard deviation shorter than the general caste children. At the same time, other backward class (OBC) children were shorter than the general caste children by about three-tenths of a standard deviation.<sup>16</sup> In addition, compared to the average height of general caste children in 2015, the average height of SC/ST children in 2015 makes India's children among the shortest in the world. This

article uses data from the NFHS-5 to examine the height complexity and heterogeneity of children in the country. It has been found that the height-for-age (height-for-age) of children in India has improved between 2015-16 and 2019-21. While this is significant, the increase is small considering the overall short length of India and India's economic progress. A subtle pattern of gender discrimination is also present in the NFHS-5 data.<sup>1</sup>

### The Length has also Improved in the rest of the world

The increase in the average height of children in India between 2015 and 2020 is significant and a matter to be celebrated. But we conclude that progress was modest and slow because growth must be considered in some context. One context is the rapid economic growth of India. According



to World Bank estimates, India's per capita income almost doubled during this period.<sup>17</sup>

Another important context is that of international comparison. India was at the bottom of the distribution of height-for-age of children in 2015-16, and it was the same in 2019-21. In only a few countries was the average child height as low as in the focus states of India in 2015-16. In recent years, no country has measured the height-for-age of children as low as it was in 2015-16 in the focus states. The average height-for-age of children in these states also increased between 2015 and 2021, but not enough to move them from the bottom, or above poorer large states such as Ethiopia, Nigeria, and the Democratic Republic of the Congo.<sup>3</sup>

### *Reasons for unsatisfactory progress*

Improvements in length were limited because the determinants of length increased slowly. An important determinant is an open defecation which spreads germs and diseases which prevent children from growing to their full potential. Open defecation has declined, but the practice was still prevalent in most rural households in 2021.<sup>18</sup>

Another important factor is the nutrition of the mothers. Women in India are underweight, especially at the age when they are most likely to become pregnant. The low social status of young women deprives them and their children of the body mass they need for the growth and nutrition of the next generation.<sup>19</sup>

The root causes of stunting in India reflect social forces and social inequality-gender discrimination in the case of maternal nutrition, and untouchability in the case of open defecation. These factors and forces should be at the center of efforts to improve the health and height of children in India.<sup>1,3,20</sup>

## CONCLUSION

Child stunting is measured by the growth of children in proportion to age. As per the survey data, the proportion of child stunting has increased in Telangana, Gujarat, Kerala, Maharashtra, and West Bengal. Stunting has reduced from 38.4% to 35.5%, place with country level. The study, which was the first in a line of studies to comprehend the change in the prevalence of childhood stunting at the NHFS (2015-16 to 2019-21), helped identify the districts with high priority and aided in the formulation of policies and program implementation. The study excludes historical antecedents that are known to influence the prevalence of childhood

stunting, such as poverty, inequality, and food insecurity. Even so, the study will help researchers and policymakers plan and implement policies to effectively control childhood stunting in India by assisting with district-specific studies.

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